

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	247857	black or white or silver	DERWENT	ADJ	ON	2005/09/19 10:01
L2	3696	l1 and tape	DERWENT	ADJ	ON	2005/09/19 10:01
L9	1042	black same silver same white	DERWENT	ADJ	ON	2005/09/19 10:07
L10	0	l9 and adhesive	US-PGPUB; USPAT	ADJ	ON	2005/09/19 10:07
L11	7	l9 and adhesive	DERWENT	ADJ	ON	2005/09/19 10:07
L12	8428	black same silver same white	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:06
L13	1748	l12 and (adhesive or glue or paste)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:06
L14	0	P2002-234438	JPO	ADJ	ON	2005/09/19 11:55
L15	0	2002-234438	JPO	ADJ	ON	2005/09/19 11:55
L16	0	JP2002-234438	JPO	ADJ	ON	2005/09/19 11:55
L17	0	(yamagami near akira) or (tanabe near hirosuke)	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L18	0	(yamagami near akira) or (tanabe near hirosuke)	USOCR; EPO	ADJ	ON	2005/09/19 11:55
L19	0	(black layer) near (silver layer) near (white layer)	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L20	0	(black layer) same (silver layer) same (white layer)	USOCR	ADJ	ON	2005/09/19 11:55
L21	1	(black layer) near (silver layer)	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L22	14	kamiya near kenji	US-PGPUB; USPAT; EPO	ADJ	ON	2005/09/19 11:55
L23	459	(takano near hiroki) or (kuwashita near akihiro) or (yamada near akihiro)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2005/09/19 11:55
L24	60	L23 and adhesive	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2005/09/19 11:55

L25	24	("3681515" "3795540" "4001159" "4139514" "4214028" "4384065" "4513107" "4542078" "4565842" "4605592" "4615754" "4645556" "4737224" "4737225" "4762875" "4889765" "4908063" "4954556" "4973617" "4980408" "5034275" "5037680" "5098478").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2005/09/19 11:55
L26	761	(akira near yamakami) or (kosuke near tanabe) or (ryuichi near nakamura) or (akihiro near kuwashita) or (akihiro near yamada)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L27	70	L26 and adhesive	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L28	84	(yamagami near akira) or (tanabe near hirosuke)	JPO	ADJ	ON	2005/09/19 11:55
L29	4	(black layer) same (silver layer) same (white layer)	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L30	4	(black layer) same (silver layer) same (white layer)	EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L31	184	black near1 silver	EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L32	842	silver near1 white	EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L33	5	L31 and L32	EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L34	1919	black same silver	DERWENT	ADJ	ON	2005/09/19 11:55
L35	1955	silver same white	DERWENT	ADJ	ON	2005/09/19 11:55
L36	1048	L34 and L35	DERWENT	ADJ	ON	2005/09/19 11:55
L37	7	L36 and adhesive	DERWENT	ADJ	ON	2005/09/19 11:55
L38	951	428/1.1.ccls.	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L39	283	L38 and adhesive	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L40	151	(whilte or black or silver) and L39	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55

L41	1339	black near1 silver	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L42	1717	silver near1 white	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L43	109	L41 and L42	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L44	283	L38 and adhesive	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L45	459	(takano near hiroki) or (kuwashita near akihiro) or (yamada near akihiro)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2005/09/19 11:55
L46	761	(akira near yamakami) or (kosuke near tanabe) or (ryuichi near nakamura) or (akihiro near kuwashita) or (akihiro near yamada)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L47	951	428/1.1.ccls.	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L48	1048	L34 and L35	DERWENT	ADJ	ON	2005/09/19 11:55
L49	3745	(428/343,354).ccls.	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L50	1420	(white or black or silver) and L49	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L51	103834	black same white	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L52	16262	L51 and adhesive	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L53	4967	L52 and tape	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L54	0	"349".ccls.	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L55	20226	"349"/\$.ccls.	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L56	1339	black near silver	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L57	1717	silver near white	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L58	109	L56 and L57	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L59	0	L58 and L55	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L60	12411	(black or white or silver) and L55	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55

L61	3214	L60 and adhesive	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L62	1919	black same silver	DERWENT	ADJ	ON	2005/09/19 11:55
L63	4	(black layer) same (silver layer) same (white layer)	EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L64	1884	black same silver same white	EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L65	11	L64 and adhesive	EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L66	4830	liquid crystal display unit or liquid crystal display module or liquid crystal display	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L67	489699	pressure sensitive adhesive tape or pressure sensitive adhesive or psa tape or adhesive tape or adhesive	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L68	26294	back light unit or back light module or back light or backlight unit or backlight module or backlight	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L69	41	L66 same L67 same L68	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L70	1	("6636378").PN.	USPAT	OR	OFF	2005/09/19 11:55
L71	3	("20010009486" "6229668" "6266207").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2005/09/19 11:55
L72	31	(takano near hiroki) or (kuwashita near akihiro) or (yamada near akihiro)	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L73	11	L64 and (adhesive or glue)	EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L74	184	black near1 silver	EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L75	109	L56 and L57	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L76	109	L56 and L57	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L77	761	(akira near yamakami) or (kosuke near tanabe) or (ryuichi near nakamura) or (akihiro near kuwashita) or (akihiro near yamada)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55

L78	842	silver near1 white	EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L79	1339	black near1 silver	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L80	1339	black near silver	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L81	1717	silver near1 white	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L82	1717	silver near white	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L83	103	(akiko near miyano) or (junji near yokoyama) or (yoshikazu near soeda)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 13:18
L84	66	L83 and adhesive	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/09/19 11:55
L85	20	(takamizawa near yukio) or (ito near tetsuya) or (matsuoka near seiji)	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L86	16	(takamizawa near yukio) or (ito near tetsuya) or (matsuoka near seiji)	USOCR; EPO	ADJ	ON	2005/09/19 11:55
L87	1	(takamizawa near yukio) or (ito near tetsuya) or (matsuoka near seiji)	USOCR	ADJ	ON	2005/09/19 11:55
L88	0	(takamizawa near yukio) or (ito near tetsuya) or (matsuoka near seiji)	DERWENT	ADJ	ON	2005/09/19 11:55
L89	769535	lcd or liquid crystal display or display or liquid crystal display unit or liquid crystal display module or lcd module or lcd unit or display module or display unit	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L90	497369	pressure sensitive adhesive or psa or adhesive	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L91	26294	backlight unit or backlight module or backlight or back light unit or back light module or back light	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L92	472	L89 same L90 same L91	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
L93	3745	(428/343,354).ccls.	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55

L94	1420	(black or white or silver) and L93	US-PGPUB; USPAT	ADJ	ON	2005/09/19 11:55
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DuPont Packaging

DU PONT The miracles of science®

Product Information

Surlyn® resins



Click to print.

For more information, e-mail us at: packaging@dupont.com

Surlyn® Properties and Performance Overview

Key features:

Hot tack | Seal temperature | Formability | Clarity | Seal through contamination | Oil/grease resistance

What are Surlyn® resins?

Surlyn® packaging resins are made from ethylene acid copolymers, in which the acid groups are partially neutralized with either zinc or sodium ions. The acid in the polymer gives polarity and reduces crystallinity. The ionic bonding between the polymer chains gives outstanding melt strength, toughness, and clarity.

The combination of properties available in Surlyn® resins is unique among polymers, and especially well suited to packaging applications. The resins are available for use in conventional extrusion/coextrusion blown film, cast film, and extrusion coating equipment* designed to process polyethylene resins.

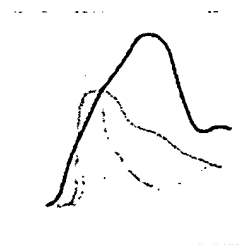
Benefits in Packaging Applications

The combination of outstanding properties of Surlyn® make it the cost-effective choice in a wide variety of packaging applications, including:

- Meat, seafood, poultry, and cheese packaging — the outstanding heat seal, hot tack, and seal through contamination properties of Surlyn® can dramatically reduce leakers both off-machine and in-store.
- Snack packaging — the low-temperature sealing and outstanding hot tack of Surlyn® allow rates on high-speed equipment to increase by as much as 300%.
- Skin packaging/stretch pak — the clarity, drawability, and toughness of Surlyn® make it a perfect choice for retail carded display packaging.
- Personal and health care packaging — outstanding sealing properties, toughness, and abrasion resistance allow packaging made with Surlyn® to give reliable, leak-free seals that ensure package integrity.
- Liquid packaging — seal through contamination and oil resistance give liquid packages made with Surlyn® a dramatic reduction in leakers.

Property Advantages of Surlyn®

Packaging Benefits



Hot tack — the highest hot tack strength and broadest hot tack range of any sealant

- higher packaging line speeds
- reduced seal failures and leakers

Sealing performance — low sealing temperatures and the widest sealing temperature range available

- faster sealing with less dwell time
- higher packaging line

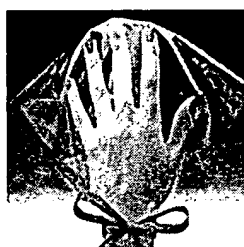


- speeds
- tolerates temperature variations in real-world equipment



Formability — excellent formability/deep draw for evenly distributed film that resists pinholing

- fewer leakers due to cracks/pinholes in thin film areas



Clarity — crystal clear film

- gives packages a high-gloss, "premium" image



Seal through contamination — highly effective at sealing through all types of contamination

- fewer failures at the packaging machine
- reduced in-store leakers



Oil/grease resistance — excellent barrier for oily or greasy products

- fewer failures at the packaging machine
- reduced in-store leakers

Surlyn® Quality and Performance

Converters and end users are asking more from their packaging resins than ever before. Higher quality standards, downgauging pressures, and more demanding applications continuously challenge the performance of packaging resins: Surlyn® meets the challenge. With its outstanding combination of properties and production at DuPont ISO 9002-qualified manufacturing facilities, Surlyn® has the performance and quality needed in today's tough packaging environment.

Also, when you buy Surlyn®, you're supported by DuPont's sales assistance and technical service teams, unparalleled in the industry for knowledge and experience in the packaging area. We'll work with you before and after the sale to be sure the grade you buy is the best to suit your needs.

FDA Status

Surlyn® packaging resins are available that comply with U.S. FDA Regulations for use in food contact applications. For more information, contact your DuPont sales office or e-mail us at: packaging@dupont.com.

*EQUIPMENT NOTE: Materials of construction used in the processing of Surlyn® resins should be corrosion-resistant. Stainless steels and duplex chrome or nickel are recommended for surfaces in contact with the molten resins.

Because DuPont cannot anticipate or control the many different conditions under which this information and/or product may be used, it does not guarantee the applicability or the accuracy of this information or the suitability of its products in any given situation. Users of DuPont products should make their own tests to determine the suitability of each such product for their particular purposes. The data listed herein falls within the normal range of product properties but they should not be used to establish specification limits or used alone as the basis of design.

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